VIRTUAL EAST-WEST SCV SEMINAR

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Spaces of holomorphic functions as optimal data sets for BVPS

One interpretation of the Hardy spaces of holomorphic functions for a given domain D is as the optimal data spaces of the L^p-Dirichlet boundary value problem for the $\bar{\partial}$ operator which also provides a natural context for "interior $H^p(D)$ and "boundary $h^p(bD)$ found in the literature. This approach to the holomorphic Hardy spaces motivates the question of characterizing, and representing, the optimal data spaces for the Neumann and other boundary value problems for $\bar{\partial}$. These questions make sense in any complex dimension; as a first step in the analysis of this problem, we give a complete answer for the Neumann boundary condition in the setting of a Lipschitz planar domain D. This is joint work with W. Gryc (Muhlenberg College), J. Xiong (U. Colorado) and Y. Zhang (Purdue U. Fort Wayne).